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Roennau, Arne Dillmann, Rüdiger Zöllner, Johann Marius	FZI Forschungszentrum Informatik, Karlsruhe Karlsruhe Institute of Technology (KIT) FZI Forschungszentrum Informatik
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fujikawa, tatsuo	Nagoya University
Sugiura, Ryuji	College of Engineering, Nihon University
Nishikata, Rie	Fukushima Medical University
Yamada, Yoji	Nagoya University
Nishimoto, tetsuya	College of Engineering, Nihon University
14:40-15:00	SaB1.2
<i>Development of a Porcine Thigh Finite Element Model for Evaluating the Soft-Tissue Injuries Caused by Blunt Impacts During Human-Robot Interactions</i> , pp. 301-305.	
Higuchi, Yu-ki	Japan Automobile Research Institute
fujikawa, tatsuo	Nagoya University
Sugiura, Ryuji	College of Engineering, Nihon University
Nishimoto, tetsuya	College of Engineering, Nihon University
Sato, Fusako	Japan Automobile Research Institute
15:00-15:20	SaB1.3
<i>Novel In-Vivo Microscopy Technique for Internal Bleeding Using Transparent Fish</i> , pp. 306-309.	
fujikawa, tatsuo	Nagoya University
Yamada, Yoji	Nagoya University
15:20-15:40	SaB1.4
<i>Experimental Injury Biomechanics of Human Body Upper Extremities: Anatomy, Injury Severity Classification, and Impact Testing Setups</i> , pp. 310-315.	
Hamad, Mazin	Technical University of Munich (TUM)
Kurdas, Alexander Andreas	Technical University of Munich
Abdolshah, Saeed	Technical University of Munich
Haddadin, Sami	Technical University of Munich
15:40-16:00	SaB1.5
<i>A Robotics Perspective on Experimental Injury Biomechanics of Human Body Upper Extremities</i> , pp. 316-321.	
Hamad, Mazin	Technical University of Munich (TUM)
Kurdas, Alexander Andreas	Technical University of Munich
Abdolshah, Saeed	Technical University of Munich
Haddadin, Sami	Technical University of Munich
<b>SaB2</b>	Room B
<b>Vision and Human Detection 2 (Regular Sessions)</b>	
14:20-14:40	SaB2.1
<i>An Improved One-Stage Detector for Vehicle and Pedestrian Detection on Campus AGV</i> , pp. 322-325.	
Wang, Ying	Chongqing University
Li, Rui	Chongqing University
Qi, Qi	Chongqing University
Su, Xiaojie	Chongqing University
14:40-15:00	SaB2.2
<i>Design of Maximum Stopping Deceleration of Mobile Manipulator Considering the Protective Separation Distance without Tip-Over</i> , pp. 326-329.	
Lee, Chang Joo	Kyung Hee University
Lee, Jihyun	Kyung Hee University
Rhim, Sungsoo	Kyung Hee University

15:00-15:20		SaB2.3
<i>Improved YOLOv5 Network Model and Application in Safety Helmet Detection</i> , pp. 330-333.		
Tan, Shilei		Chongqing University
Lu, Gonglin		Chongqing University
Jiang, Ziqiang		Chongqing University
Huang, Li		Chongqing University
15:20-15:40		SaB2.4
<i>Vision Based Collision Detection for a Safe Collaborative Industrial Manipulator</i> , pp. 334-337.		
Maric, Bruno	Univeristy of Zagreb, Faculty of Electrical Engineering and Comp	
Juričan, Fran	University of Zagreb, Faculty of Electrical Engineering and Comp	
Orsag, Matko	University of Zagreb, Faculty of Electrical Engineering and Comp	
Kovacic, Zdenko	University of Zagreb	
15:40-16:00		SaB2.5
<i>Cumulative Clustering Filter for MIMO Radar Detecting Human Hand Intrusion</i> , pp. 338-341.		
Wu, Huazhe		Nagoya University
Kim, Eugene		Nagoya University
Yamada, Yoji		Nagoya University
Okamoto, Shogo		Nagoya University
<b>SaB3</b>		Room C
<b>Industrial Application</b> (Regular Sessions)		
14:20-14:40		SaB3.1
<i>Proposal of Position Error Compensation Method That Enables Immediate Work When Replacing Industrial Robots</i> , pp. 342-345.		
Yamaguchi, Riku		University of Tsukuba
Aiyama, Yasumichi		University of Tsukuba
14:40-15:00		SaB3.2
<i>Improving Control of a Teleoperated Robot Using an Adaptive Oscillator to Perform a Rhythmic Task for Foundry Applications</i> , pp. 346-350.		
Menges, Baptiste	Laboratoire Lorrain De Recherche En Informatique Et Ses Applicat	
Henaff, Patrick	Université De Lorraine, CNRS, INRIA, LORIA, F-54000 Nancy, Fra	
GUENARD, Adrien	CNRS	
15:00-15:20		SaB3.3
<i>Human Aware Robot Motion Planning Using RRT Algorithm in Industry 4.0 Environment</i> , pp. 351-358.		
ROY CHOWDHURY, ABHRA		Indian Institute of Science
Laxmi, Aiswarya		Sastra University
15:20-15:40		SaB3.4
<i>Single Sheet Separation Method from Piled Fabrics Using Roller Hand Mechanism</i> , pp. 359-362.		
Manabe, Keisuke		University of Tsukuba
Tong, Xin		University of Tsukuba
Aiyama, Yasumichi		University of Tsukuba
15:40-16:00		SaB3.5
<i>From Handcrafting to a Certified and Ergonomic Collaborative Workstation: The Digital Transformation Process</i> , pp. 363-366.		
Cunha, João G.		DTx CoLab
Faria, Carlos		University of Minho
Colim, Ana		DTx-CoLab
Oliveira, João		DTx-CoLab
Rocha, Luís		DTx-CoLab
Silva, Márcio		DTx-CoLab
Monteiro, Sérgio		University of Minho
Bicho, Estela		University of Minho

<b>SaC1</b>	Room A
<b>Assist Robot (Regular Sessions)</b>	
16:30-16:50	SaC1.1
<i>Effect of Assist Robot on Muscle Synergy During Sit-To-Stand Movement</i> , pp. 367-368.	
Wang, Tianyi	Ritsumeikan University
Okada, Shima	Graduate School of Sci. and Eng., Ritsumeikan University
Guo, An	Osaka University
Makikawa, Masaaki	College of Sci/ and Eng., Ritsumeikan University
Shiozawa, Naruhiro	Ritsumeikan University
16:50-17:10	SaC1.2
<i>Integral Sliding Mode Control for a Human Support Robot</i> , pp. 369-372.	
Qing, Fandi	Chongqing University
Chang, Hongbin	Chongqing University
Su, Xiaojie	Chongqing University
Wang, Shuoyu	Kochi University of Technology
17:10-17:30	SaC1.3
<i>Study on Assistance Force of Standing Assist Robot</i> , pp. 373-377.	
Wang, Tianjie	Shenyang University of Technology
Wang, Yina	Shenyang University of Technology
Yang, Junyou	Shenyang University of Technology
Wang, Shuoyu	Kochi University of Technology
17:30-17:50	SaC1.4
<i>Effect of Different Gait Phase-Based Assist Patterns of a Wearable Robot on Gait Motion</i> , pp. 378-381.	
Kondo, Kiichi	Nagoya University
Akiyama, Yasuhiro	Nagoya-University
Okamoto, Shogo	Nagoya University
Yamada, Yoji	Nagoya University
<b>SaC2</b>	Room B
<b>Machine Learning and Modeling 2 (Regular Sessions)</b>	
16:30-16:50	SaC2.1
<i>Explainable Artificial Intelligence Requirements for Safe, Intelligent Robots</i> , pp. 382-387.	
Sheh, Raymond Ka-Man	Georgetown University
16:50-17:10	SaC2.2
<i>Evaluating Machine Learning Performance for Safe, Intelligent Robots</i> , pp. 388-393.	
Sheh, Raymond Ka-Man	Georgetown University
17:10-17:30	SaC2.3
<i>A Novel Posture Recognition Based on Time Series Supervised Learning Algorithm</i> , pp. 394-398.	
Bowen, Duan	Shenyang University of Technology
Donghui, Zhao	Shenyang University of Technology
Yang, Junyou	Shenyang University of Technology
Wang, Shuoyu	Kochi University of Technology
17:30-17:50	SaC2.4
<i>A Reference Model in Safety Design of a Modular Service Robot Based on MBSE: A Case Study of a Stocking Robot in a Supermarket</i> , pp. 399-402.	
Kimura, Tetsuya	Nagaoka University of Technology
Miyoshi, Takao	THK / Nagaoka University of Technology
<b>SaC3</b>	Room C
<b>Navigation and Path Planning 2 (Regular Sessions)</b>	
16:30-16:50	SaC3.1
<i>Path Planning Algorithm Based on the Improved RRT-Connect for Home Service Robot Arms</i> , pp. 403-407.	
Li, Shuyu	Shenyang University of Technology
Donghui, Zhao	Shenyang University of Technology

Sun, Yizhen	Shenyang University of Technology
Yang, Junyou	Shenyang University of Technology
Wang, Shuoyu	Kochi University of Technology
16:50-17:10	SaC3.2
<i>Personal Care Robot Navigation System Based on Multi-Sensor Fusion</i> , pp. 408-412.	
Sun, Yizhen	Shenyang University of Technology
Yang, Junyou	Shenyang University of Technology
Donghui, Zhao	Shenyang University of Technology
Li, Shuyu	Shenyang University of Technology
17:10-17:30	SaC3.3
<i>Multi-Welfare-Robot Cooperation Framework for Multi-Task Assignment in Healthcare Facilities Based on Multi-Agent System</i> , pp. 413-416.	
Li, Yong	Shenyang University of Technology
Jiao, Xuanyu	Shenyang University of Technology
Sun, Baiqing	Shenyang University of Technology
Zhang, Qiuhaohao	Shenyang University of Technology
Yang, Junyou	Shenyang University of Technology
17:30-17:50	SaC3.4
<i>Mobile Robot Navigation Based on Deep Reinforcement Learning with 2D-LiDAR Sensor Using Stochastic Approach</i> , pp. 417-422.	
Han, Beomsoo	Hokkaido University
Ravankar, Ankit	Faculty of Engineering, Hokkaido University
Emaru, Takanori	Hokkaido University